

**CLAIMS**

1. A phase-selective type frequency modulator comprising:  
multiphase clock signal generating means for generating  
5 N-phase clock signals having phase differences from each  
others;  
control means for sequentially activating one of first  
group of clock selection signals indicating a clock signal  
to be selected from the N-phase clock signals outputted from  
10 said multiphase clock signal generating means, said first  
group of clock selection signals corresponding to said N-phase  
clock signals;  
edge appearance time adjusting means for adjusting a  
rising edge appearance time and/or a trailing edge appearance  
15 time of the first group of clock selection signals outputted  
from said control means to output second group of clock  
selection signals corresponding to the N-phase clock signals  
outputted from said multiphase clock signal generating means;  
and  
20 modulated clock signal generating means for selecting  
one clock signal from said N-phase clock signals in accordance  
with an activated state of said second group of clock selection  
signals outputted from said edge appearance time adjusting  
means to output the selected clock signal as a modulated clock  
25 signal.
2. A phase-selective type frequency modulator comprising:  
multiphase clock signal generating means for generating

N-phase clock signals having phase differences from each others;

control means for sequentially activating one of first group of clock selection signals indicating a clock signal 5 to be selected from the N-phase clock signals outputted from said multiphase clock signal generating means, said first group of clock selection signals corresponding to said N-phase clock signals;

edge appearance time adjusting means for adjusting a 10 rising edge appearance time and/or a trailing edge appearance time of the first group of clock selection signals outputted from said control means to output second group of clock selection signals corresponding to the N-phase clock signals outputted from said multiphase clock signal generating means;

15 modulated clock signal generating means for selecting one clock signal from said N-phase clock signals in accordance with an activated state of said second group of clock selection signals outputted from said edge appearance time adjusting means to output the selected clock signal; and

20 PLL (phase locked loop) means for receiving the clock signal selected by said modulated clock signal generating means and filtering jitter in the selected clock signal to output a modulated clock signal.

3. A phase-selective type frequency modulator according 25 to claim 1, wherein said edge appearance time adjusting means adjusts the rising edge appearance time and/or the trailing edge appearance time of said first group of clock selection

signals such that a rising edge appearance time and/or a trailing edge appearance time of the clock signal selected in accordance with the first clock selection signal activated by said selecting means and a rising edge appearance time and/or a trailing edge appearance time of said second group of clock selection signals may not overlap.

4. A phase-selective type frequency modulator according to claim 2, wherein said edge appearance time adjusting means adjusts the rising edge appearance time and/or the trailing edge appearance time of said first group of clock selection signals such that a rising edge appearance time and/or a trailing edge appearance time of the clock signal selected in accordance with the first clock selection signal activated by said selecting means and a rising edge appearance time and/or a trailing edge appearance time of said second group of clock selection signals may not overlap.

5. A phase-selective type frequency synthesizer comprising:

control means for sequentially activating one of first group of clock selection signals indicating a clock signal to be selected from N-phase clock signals having phase differences from each others, said first group of clock selection signals corresponding to said N-phase clock signals;

edge appearance time adjusting means for adjusting a rising edge appearance time and/or a trailing edge appearance time of the first group of clock selection signals outputted

from said control means to output second group of clock selection signals corresponding to said N-phase clock signals;

modulated clock signal generating means for selecting  
5 one clock signal from said N-phase clock signals in accordance with an activated state of said second group of clock selection signals outputted from said edge appearance time adjusting means to output the selected clock signal;

phase comparing means for comparing a phase of a reference  
10 clock signal and a phase of the clock signal selected by said modulated clock signal generating means; and

multiphase clock signal generating means for generating said N-phase clock signals based on a comparison result in said phase comparing means and outputting one of said N-phase  
15 clock signals as a modulated clock signal.

6. A phase-selective type frequency synthesizer according to claim 5, further comprising dividing means for frequency-dividing the clock signal selected by said modulated clock signal generating means and outputting the  
20 frequency-divided clock signal to said phase comparing means.